General

Guideline Title

Reduced fetal movements.

Bibliographic Source(s)

Royal College of Obstetricians and Gynaecologists (RCOG). Reduced fetal movements. London (UK): Royal College of Obstetricians and Gynaecologists (RCOG); 2011 Feb. 16 p. (Green-top guideline; no. 57). [84 references]

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

In addition to these evidence-based recommendations, the guideline development group also identifies points of best clinical practice in the original guideline document.

Classification of evidence levels (1++ to 4) and grades of recommendations (A–D) are defined at the end of the "Major Recommendations" field.

What Are Considered Normal Fetal Movements during Pregnancy?

C - Most women are aware of fetal movements by 20 weeks of gestation.

B - Clinicians should be aware (and should advise women) that although fetal movements tend to plateau at 32 weeks of gestation, there is no reduction in the frequency of fetal movements in the late third trimester.

How Can Fetal Movements Be Assessed?

C - Fetal movements should be assessed by subjective maternal perception of fetal movements.

Should Fetal Movements Be Counted Routinely in a Formal Manner?

B - There is insufficient evidence to recommend formal fetal movement counting using specified alarm limits.

C - Women should be advised to be aware of their baby's individual pattern of movements. If they are concerned about a reduction in or cessation of fetal movements after 28^{+0} weeks of gestation, they should contact their maternity unit.

C - If women are unsure whether movements are reduced after 28^{+0} weeks of gestation, they should be advised to lie on their left side and focus on fetal movements for 2 hours. If they do not feel 10 or more discrete movements in 2 hours, they should contact their midwife or maternity unit immediately.

B - Clinicians should be aware that instructing women to monitor fetal movements is potentially associated with increased maternal anxiety.

What Is the Optimal Management of Women with Reduced Fetal Movements (RFM)?

The initial goal of antenatal fetal surveillance in cases of RFM is to exclude fetal death. Subsequent to this, the aim is to exclude fetal compromise and to identify pregnancies at risk of adverse pregnancy outcome while avoiding unnecessary interventions.

What Should Be Included in the Clinical History?

B - Upon presenting with RFM, a relevant history should be taken to assess a woman's risk factors for stillbirth and fetal growth restriction (FGR).

C - If after discussion with the clinician it is clear that the woman does not have RFM, there are no other risk factors for stillbirth and there is the presence of a fetal heart rate on auscultation, she can be reassured. However, if the woman still has concerns, she should be advised to attend her maternity unit.

A history of RFM should be taken, including the duration of RFM, whether there has been absence of fetal movements and whether this is the first occasion the woman has perceived RFM. The history must include a comprehensive stillbirth risk evaluation, including a review of the presence of other factors associated with an increased risk of stillbirth, such as multiple consultations for RFM, known FGR, hypertension, diabetes, extremes of maternal age, primiparity, smoking, placental insufficiency, congenital malformation, obesity, racial/ethnic factors, poor past obstetric history (e.g., FGR and stillbirth), genetic factors and issues with access to care. Clinicians should be aware that a woman's risk status is fluid throughout pregnancy and that women should be transferred from low-risk to high-risk care programmes if complications occur. If after discussion with the clinician it is clear that the woman does not have RFM, in the absence of further risk factors and the presence of a normal fetal heart rate on auscultation, there should be no need to follow up with further investigations.

What Should Be Covered in the Clinical Examination?

B - If a woman presents with RFM in the community setting with no facility to auscultate the fetal heart, she should be referred immediately to her maternity unit for auscultation.

B - When a woman presents with RFM in the community or hospital setting, an attempt should be made to auscultate the fetal heart using a handheld Doppler device to exclude fetal death.

Clinical assessment of a woman with RFM should include assessment of fetal size with the aim of detecting small-for-gestational-age (SGA) fetuses.

The key priority when a woman presents with RFM is to confirm fetal viability. In most cases, a handheld Doppler device will confirm the presence of the fetal heart beat. This should be available in the majority of community settings in which a pregnant woman would be seen by a midwife or general practitioner. The fetal heart beat needs to be differentiated from the maternal heart beat. This is easily done in most cases by noting the difference between the fetal heart rate and the maternal pulse rate. If the presence of a fetal heart beat is not confirmed, immediate referral for ultrasound scan assessment of fetal cardiac activity must be undertaken. If the encounter with the woman has been over the telephone and there is thus no additional reassurance of auscultation of the fetal heart, the woman should be advised to report for further assessment. [Evidence level 2+]

Methods employed to detect SGA fetuses include abdominal palpation, measurement of symphysis–fundal height and ultrasound biometry. The Royal College of Obstetricians and Gynaecologists (RCOG) guidelines on the investigation and management of the SGA fetus recommend use of a customised fundal height chart. Consideration should be given to the judicious use of ultrasound to assess fetal size in women in whom clinical assessment is likely to be less accurate, for example those with a raised body mass index. As pre-eclampsia is also associated with placental dysfunction, it is prudent to measure blood pressure and test urine for proteinuria in women with RFM.

What Is the Role of Cardiotocography (CTG)?

B - After fetal viability has been confirmed and history confirms a decrease in fetal movements, arrangements should be made for the woman to have a cardiotocography to exclude fetal compromise if the pregnancy is over 28^{+0} weeks of gestation.

What Is the Role of Ultrasound Scanning?

B - Ultrasound scan assessment should be undertaken as part of the preliminary investigations of a woman presenting with RFM after 28^{+0} weeks

of gestation if the perception of RFM persists despite a normal cardiotocography or if there are any additional risk factors for fetal growth restriction/stillbirth.

C - Ultrasound scan assessment should include the assessment of abdominal circumference and/or estimated fetal weight to detect the SGA fetus, and the assessment of amniotic fluid volume.

A - Ultrasound should include assessment of fetal morphology if this has not previously been performed and the woman has no objection to this being carried out.

Is There Any Role for the Biophysical Profile (BPP)?

B - There may be a role for the selective use of biophysical profile in the management or investigation of RFM.

What Is the Optimal Surveillance Method for Women Who Have Presented with RFM in Whom Investigations Are Normal?

C - Women should be reassured that 70% of pregnancies with a single episode of RFM are uncomplicated.

C - There are no data to support formal fetal movement counting (kick charts) after women have perceived RFM in those who have normal investigations.

What Is the Optimal Management of the Woman Who Presents Recurrently with Reduced RFM?

C - When a woman recurrently perceives RFM, her case should be reviewed to exclude predisposing causes.

B - When a woman recurrently perceives RFM, ultrasound scan assessment should be undertaken as part of the investigations.

There are no studies to determine whether intervention (e.g. delivery or further investigation) alters perinatal morbidity or mortality in women presenting with recurrent RFM. Therefore, the decision whether or not to induce labour at term in a woman who presents recurrently with RFM when the growth, liquor volume and CTG appear normal must be made after careful consultant-led counselling of the pros and cons of induction on an individualised basis.

What Should We Document in the Maternal Records?

It is important that full details of assessment and management are documented. It is also important to record the advice given about follow-up and when/where to present if a further episode of RFM is perceived. Accurate record keeping is needed in sufficient detail to ensure that the consultation and outcome can be easily audited and continuity of care provided.

Definitions:

Grades of Recommendation

A - At least one meta-analysis, systematic review or randomised controlled trial rated as 1++ and directly applicable to the target population; *or*

A systematic review of randomised controlled trials or a body of evidence consisting principally of studies rated as 1+ directly applicable to the target population and demonstrating overall consistency of results

B - A body of evidence including studies rated as 2++ directly applicable to the target population and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 1++ or 1+

C - A body of evidence including studies rated as 2+ directly applicable to the target population and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 2++

D - Evidence level 3 or 4; *or*

Extrapolated evidence from studies rated as 2+

Good Practice Point - Recommended best practice based on the clinical experience of the guideline development group

Classification of Evidence Levels

1++ High-quality meta-analyses, systematic review of randomised controlled trials or randomised controlled trials with a very low risk of bias

1+ Well-conducted meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a low risk of bias

1- Meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a high risk of bias

2++ High-quality systematic reviews of case–control or cohort studies or high quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal

2+ Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal

2- Case–control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal

3 Non-analytical studies; e.g., case reports, case series

4 Expert opinion

Clinical Algorithm(s)

A clinical algorithm on management of patients with first presentation of reduced fetal movements (RFM) at >28^{+0} weeks of gestation is provided in Appendix 1 of the original guideline document.

Scope

Disease/Condition(s)

Reduced fetal movements

Guideline Category

Evaluation

Management

Risk Assessment

Treatment

Clinical Specialty

Family Practice

Internal Medicine

Obstetrics and Gynecology

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To provide advice to guide clinicians, based on the best evidence where available, regarding the management of women presenting with reduced fetal movements (RFM) during pregnancy
- To review the risk factors for RFM in pregnancy and factors influencing maternal perception
- To provide recommendations as to how women presenting in both the community and hospital settings should be managed

Target Population

Pregnant women in community or hospital settings reporting reduced fetal movements (RFM) in singleton pregnancies

Note: This guideline excludes the management of RFM in multiple pregnancy.

Interventions and Practices Considered

1. Patient education regarding expected fetal movements up to and including the onset of labour and the need to report any decrease or cessation of fetal movements to the maternity unit
2. Assessment of fetal movements by subjective maternal perception
3. Relevant history to assess a woman's risk factors for stillbirth, fetal growth restriction (FGR), small-for-gestational-age (SGA) fetus, placental insufficiency and congenital malformations
4. Further investigation in maternity unit
5. Auscultation of the fetal heart using a handheld Doppler device and assessment of fetal size
6. Cardiotocography (CTG)
7. Ultrasound scan assessment including abdominal circumference and/or estimated fetal weight, amniotic fluid volume, and fetal morphology
8. Selective use of biophysical profile (BPP)
9. Case review to exclude predisposing causes and ultrasound scan assessment with recurrently perceived reduced fetal movements (RFM)
10. Auscultation with a Doppler handheld device and referral to a specialist fetal medicine centre, for women who present with RFM prior to 24^{+0} weeks of gestation
11. Auscultation with a Doppler handheld device for women who present with RFM between 24^{+0} to 28^{+0} weeks of gestation
12. Documentation

Note: Formal fetal movement counting using specified alarm limits was considered, but there is insufficient evidence to recommend.

Major Outcomes Considered

- Frequency of fetal movements
- Perinatal mortality rate
- Fetal compromise and risk of adverse pregnancy outcome
- Stillbirth rates

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

This guideline was developed in accordance with standard methodology for producing Royal College of Obstetricians and Gynaecologists (RCOG) Green-top guidelines (see "Availability of Companion Documents" field). Medline, PubMed, all Evidence-Based Medicine (EBM) reviews (Cochrane Central Register of Controlled Trials [CRCT], Cochrane Database of Systematic Reviews, Methodology register, American College of Physicians [ACP] Journal Club, Database of Abstracts of Reviews and Effects [DARE], Health Technology Assessment [HTA], Maternity and Infant Care), EMBASE and Turning Research into Practice (TRIP) were searched for relevant randomised controlled trials, systematic reviews and meta-analyses, cohort studies and case studies. The search was restricted to articles published between 1980 and November 2008. Search words included 'fetal activity', 'fetal movement + detection', 'reduced fetal movement', 'fetal cardiotocography', 'fetal heart auscultation' and 'umbilical artery Doppler', including all relevant MeSH terms. The search was limited to humans and the English language. The National Library for Health and the National Guideline Clearinghouse were also searched for relevant guidelines.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Classification of Evidence Levels

1++ High-quality meta-analyses, systematic review of randomised controlled trials or randomised controlled trials with a very low risk of bias

1+ Well-conducted meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a low risk of bias

1- Meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a high risk of bias

2++ High-quality systematic reviews of case–control or cohort studies or high quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal

2+ Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal

2- Case–control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal

3 Non-analytical studies, e.g., case reports, case series

4 Expert opinion

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Reviewing and Grading of Evidence

Once the evidence has been collated for each clinical question it needs to be appraised and reviewed (refer to section 3 in "Development of RCOG Green-top guidelines: producing a clinical practice guideline" for information on the formulation of the clinical questions; see the "Availability of Companion Documents" field). For each question, the study type with least chance of bias should be used. If available, randomised controlled trials (RCTs) of suitable size and quality should be used in preference to observational data. This may vary depending on the outcome being examined.

The level of evidence and the grade of the recommendations used in this guideline originate from the guidance by the Scottish Intercollegiate

Guidelines Network (SIGN) Grading Review Group, which incorporates formal assessment of the methodological quality, quantity, consistency, and applicability of the evidence base. The methods used to appraise individual study types are available from the SIGN Web site (www.sign.ac.uk/methodology/checklists.html). An objective appraisal of study quality is essential, but paired reviewing by guideline leads may be impractical because of resource constraints.

Once evidence has been collated and appraised, it can be graded. A judgement on the quality of the evidence will be necessary using the grading system (see the "Rating Scheme for the Strength of the Evidence" field). Where evidence is felt to warrant 'down-grading', for whatever reason, the rationale must be stated. Evidence judged to be of poor quality can be excluded. Any study with a high chance of bias (either 1– or 2–) will be excluded from the guideline and recommendations will not be based on this evidence. This prevents recommendations being based on poor-quality RCTs when higher-quality observational evidence is available.

Methods Used to Formulate the Recommendations

Expert Consensus

Informal Consensus

Description of Methods Used to Formulate the Recommendations

Guideline Development

The development of guidelines involves more than the collation and reviewing of evidence. Even with high-quality data from systematic reviews of randomised controlled trials, a value judgement is needed when comparing one therapy with another. This will therefore introduce the need for consensus.

Royal College of Obstetricians and Gynaecologists (RCOG) Green-top guidelines are drafted by nominated developers, in contrast to other guideline groups such as the National Institute for Health and Clinical Excellence (NICE) and the Scottish Intercollegiate Guidelines Network (SIGN), who use larger guideline development groups. Equally, in contrast to other guideline groups, the topics chosen for development as Green-top guidelines are concise enough to allow development by a smaller group of individuals.

In agreeing the precise wording of evidence-based guideline recommendations and in developing consensus-based 'good practice points', the Guidelines Committee (GC) will employ an informal consensus approach through group discussion. In line with current methodologies, the entire development process will follow strict guidance and be both transparent and robust. The RCOG acknowledges that formal consensus methods have been described but these require further evaluation in the context of clinical guideline development. It is envisaged that this will not detract from the rigor of the process but prevent undue delays in development.

Rating Scheme for the Strength of the Recommendations

Grades of Recommendation

A - At least one meta-analysis, systematic review or randomised controlled trial rated as 1++ and directly applicable to the target population; *or*

A systematic review of randomised controlled trials or a body of evidence consisting principally of studies rated as 1+ directly applicable to the target population and demonstrating overall consistency of results

B - A body of evidence including studies rated as 2++ directly applicable to the target population and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 1++ or 1+

C - A body of evidence including studies rated as 2+ directly applicable to the target population and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 2++

D - Evidence level 3 or 4; *or*

Extrapolated evidence from studies rated as 2+

Good Practice Point - Recommended best practice based on the clinical experience of the guideline development group

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Following discussion in the Guidelines Committee (GC), each Green-top guideline is formally peer reviewed. At the same time, the draft guideline is published on the Royal College of Obstetricians and Gynaecologists (RCOG) Web site for further peer discussion before final publication.

All comments will be collated by the RCOG and tabulated for consideration by the guideline leads. Each comment will require discussion. Where comments are rejected then justification will need to be made. Following this review, the document will be updated and the GC will then review the revised draft and the table of comments.

Once the GC signs-off on the guideline, it is submitted to the Standards Board for approval before final publication.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Normal perception of fetal movements is associated with a positive effect on maternal–fetal attachment.
- The initial goal of antenatal fetal surveillance in cases of reduced fetal movements (RFM) is to exclude fetal death. Subsequent to this, the aim is to exclude fetal compromise and to identify pregnancies at risk of adverse pregnancy outcome while avoiding unnecessary interventions.

Potential Harms

Clinicians should be aware that instructing women to monitor fetal movements is potentially associated with increased maternal anxiety.

Qualifying Statements

Qualifying Statements

- This guideline excludes the management of reduced fetal movement (RFM) in multiple pregnancy. As is apparent from the low grading of the evidence for many of the recommendations, they have been developed to provide a broad practical guide for midwives and obstetricians in clinical practice. However, it is recognised that in individual women alternative approaches may be reasonable.
- These recommendations are not intended to dictate an exclusive course of management or treatment. They must be evaluated with reference to individual patient needs, resources and limitations unique to the institution and variations in local populations. It is hoped that this process of local ownership will help to incorporate these guidelines into routine practice. Attention is drawn to areas of clinical uncertainty where further research may be indicated.
- The Royal College of Obstetricians and Gynaecologists (RCOG) produces guidelines as an educational aid to good clinical practice. They present recognised methods and techniques of clinical practice, based on published evidence, for consideration by obstetricians and gynaecologists and other relevant health professionals. The ultimate judgement regarding a particular clinical procedure or treatment plan must be made by the doctor or other attendant in the light of clinical data presented by the patient and the diagnostic and treatment options available.
- This means that RCOG guidelines are unlike protocols or guidelines issued by employers, as they are not intended to be prescriptive directions defining a single course of management. Departure from the local prescriptive protocols or guidelines should be fully documented in the patient's case notes at the time the relevant decision is taken.
- Interpreting studies of women perceiving RFM is complicated by multiple definitions of normal and abnormal fetal movements (discussed in detail in section 5 of the original guideline document) and a paucity of large-scale (over 1000 participants) descriptive or intervention studies. There are no randomised controlled trials addressing the management of RFM. The main outcome of interest – stillbirth – is relatively uncommon and adequately powered studies of different management protocols would require large numbers of participants. Consequently, many studies have limitations in terms of definition of RFM and outcomes, ascertainment bias and selection bias.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Audit Criteria/Indicators

Clinical Algorithm

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

Royal College of Obstetricians and Gynaecologists (RCOG). Reduced fetal movements. London (UK): Royal College of Obstetricians and Gynaecologists (RCOG); 2011 Feb. 16 p. (Green-top guideline; no. 57). [84 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 Feb

Guideline Developer(s)

Royal College of Obstetricians and Gynaecologists - Medical Specialty Society

Source(s) of Funding

Royal College of Obstetricians and Gynaecologists

Guideline Committee

Guidelines Committee

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Guideline authors are required to complete a "declaration of interests" form.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the Royal College of Obstetricians and Gynaecologists (RCOG) Web site .

Availability of Companion Documents

The following are available:

- Development of RCOG Green-top guidelines: policies and processes. Clinical Governance Advice No 1a. London (UK): Royal College of Obstetricians and Gynaecologists (RCOG); 2006 Nov. 6 p. Electronic copies: Available from the Royal College of Obstetricians and Gynaecologists (RCOG) Web site .
- Development of RCOG Green-top guidelines: producing a scope. Clinical Governance Advice No 1b. London (UK): Royal College of Obstetricians and Gynaecologists (RCOG); 2006 Nov. 4 p. Electronic copies: Available from the RCOG Web site .
- Development of RCOG Green-top guidelines: producing a clinical practice guideline. Clinical Governance Advice No 1c. London (UK): Royal College of Obstetricians and Gynaecologists (RCOG); 2006 Nov. 13 p. Electronic copies: Available from the RCOG Web site .
- Development of RCOG Green-top guidelines: consensus methods for adaptation of Green-top guidelines. Clinical Governance Advice No 1d. London (UK): Royal College of Obstetricians and Gynaecologists (RCOG); 2010 Feb. 9 p. Electronic copies: Available from the RCOG Web site .

In addition, auditable standards can be found in section 14 of the original guideline document .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on June 10, 2011. The information was verified by the guideline developer on July 22, 2011.

Copyright Statement

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